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10/510,952	03/16/2005	Hideo Hayashi	040565	8837

7590
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NEW YORK, NY 10017

06/23/2010

EXAMINER

HENRY, MICHAEL C

ART UNIT	PAPER NUMBER
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1623

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06/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,952	Applicant(s) HAYASHI, HIDEO	
	Examiner MICHAEL C. HENRY	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/04/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/04/08 has been entered.

The following office action is a responsive to the Amendment filed, 08/04/08.

The amendment filed 08/04/08 affects the application, 10/510,952 as follows:

The declaration of Tsuyoshi Katayama, submitted by Applicants on 04 August, 2008 under 37 CFR § 1.132, is acknowledged and will be further discussed below.

1. Claim 17 has been amended. The rejections of the prior office action are maintained.
2. The responsive to applicants' arguments is contained herein below.

Claims 17-31 are pending in the application

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the phrase “a method of preparing gum Arabic having an improved emulsifying ability”. However, the claim is indefinite since it is unclear what emulsifying ability or what compound emulsifying ability is said “improved emulsifying ability” is being compared

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with or referred to. For example, it is unclear if the improved emulsifying ability of the gum Arabic produced is compared to emulsifying ability of the gum Arabic used in applicant's method or some other compound or substance. Claim 28 recites the phrase "using the gum arabic. However, the claim is indefinite since it is unclear how the gum arabic is used or what constitutes using the gum Arabic or how it is being used as an emulsifier.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 17 is drawn to a method for preparing gum arabic having an improved emulsifying ability which comprises a step of heating the gum arabic, which is at least one gum arabic selected from the group consisting of blocks, beads, crude pulverizates, granules and pellets having an average particle diameter of not less than 1 mm, at a temperature of not less than 60°C in an atmosphere having a relative humidity of 30-100%, in the absence of an octenylsuccinic acid treatment step. However, the recitation of the language "in the absence of an octenylsuccinic acid treatment step" in the claim constitutes new matter as set forth in the claim. More specifically, the specification does not describe, disclose, provide or use any language or

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matter that pertains to “an octenylsuccinic acid treatment step” as recited in the claim.

Furthermore, the introduction of the said language “an octenylsuccinic acid treatment step”, as set forth in claim 17, constitutes new matter. On the contrary, it should be noted that the specification describes heating the gum arabic at a given temperature range in an atmosphere having a given relative humidity. Moreover, the specification does not have support for the said language and consequently the claims contain new matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ward (Abstract of Papers, 220th ACS National Meeting, Washington, DC, United States, August 20-24, 2000 (2000) CARB-080).

Claim 26 is a product-by-process claim wherein the applicant claims a modified gum arabic obtained by the method according to Claim 17. Ward discloses applicant's modified gum arabic (see abstract). A quotation from the MPEP (Manual of Patent Examining Procedure, 8 ed., August 2001) pertaining to Product-by-Process Claims is given below in order for further corroborate the reason for the aforementioned rejection. The quotation states that “PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product

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itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).” In claim 27, applicant claims an emulsifier comprising the modified gum arabic obtained by the method according to Claim 17 as an active ingredient. Ward discloses applicant’s emulsifier comprising modified gum arabic (see abstract). In claim 28, applicant a method for preparing an emulsion which comprises using the modified gum arabic obtained by the method according to Claim 17 as an emulsifier. Ward discloses applicant’s method for preparing an emulsion which comprises using modified gum Arabic (see abstract). In claim 29 applicant claims the method for preparing an emulsion according to Claim 28 wherein the emulsion is an O/W or W/O/W emulsion which contains, as a dispersoid, at least one hydrophobic substance selected from the group consisting of essential oils, oily flavorings, oily colors, fat-soluble vitamins, polyunsaturated fatty acids, animal or vegetable oils, sucrose acetate isobutyrate, and medium-chain triglycerides. Ward discloses applicant’s method for preparing an emulsion (oil in water) which comprises using modified gum Arabic and various oils as dispersoid (see abstract). Claim 30 is a product-by-process claim wherein applicant claims an emulsion prepared by the method according to claim 28. Ward discloses applicant’s emulsion comprising modified gum Arabic (see abstract). In claim 31, applicant claims, the emulsion according to Claim 30 which is an O/W or W/O/W emulsion which contains, as a dispersoid, at least one hydrophobic substance selected from the group consisting of essential oils, oily flavorings, oily colors, fat-soluble vitamins, polyunsaturated fatty acids, animal or vegetable oils, sucrose acetate isobutyrate, and medium-chain triglycerides.

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Ward discloses applicant's emulsion (oil in water) which comprises modified gum arabic and various oils (see abstract).

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wilson et al. (US 3,226,378).

Claims 26-27 are product-by-process claims drawn to a modified gum arabic and an emulsifier (respectively) that are obtained by the method according to Claim 17.

Wilson et al. discloses a method for preparing gum arabic which comprises a step of heating the gum arabic at a temperature of 160 °F (71°C) to 190 (88 °C) in an atmosphere having a relative humidity between 50 and 85% (see claim 10 and examples). Wilson et al. is silent about the physical properties that pertains the emulsifying ability of the prepared gum Arabic. However, the silence of Wilson et al. with respect to emulsifying ability of the prepared gum Arabic does not mean that the said gum Arabic does not have an improved emulsifying ability, especially since Wilson et al. disclose that the prepared product is purified and has an acceptable

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viscosity (see claim 10 and examples). Furthermore, it must be noted that the reaction condition used by Wilson et al. is the same as applicants'. Wilson et al. anticipates the claims if their gum Arabic has an improved emulsifying ability. Wilson et al. renders the claims as being obvious because, a skilled artisan would reasonable expect the purified gum arabic which has an acceptable viscosity to have an improved emulsifying ability. In addition, it should be noted that the Wilson et al.'s gum Arabic has been modified in that it presently has an acceptable plate count value and an acceptable viscosity (see claim 10). Furthermore, it must be noted that the reaction condition used by Wilson et al. is the same as that claimed by applicant.

It is important to note that the claims discloses physical characteristics with respect to the form of the gum Arabic used (e.g., granules) but does not disclose the physical characteristics of the gum arabic produced which (like Wilson's gum Arabic) may well be in powdered form.

A quotation from the MPEP (Manual of Patent Examining Procedure, 8 ed., August 2001) pertaining to Product-by-Process Claims is given below in order for further corroborate the reason for the aforementioned rejection. The quotation states that "PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)."

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 3,226,378).

In claim 17, applicants' claim a method for preparing gum arabic having an improved emulsifying ability which comprises a step of heating the gum arabic at a temperature of not less than 60°C in an atmosphere having a relative humidity of 30-100 %. Dependent claims 18-27 are drawn to said method wherein the gum Arabic is heated in the an atmosphere of specific relative humidity, wherein the gum arabic is heated at specific temperature, and in a closed or open system.

Wilson et al. discloses a method for preparing gum arabic which comprises a step of heating the gum arabic at a temperature of 160 °F (71°C) to 190 (88 °C) in an atmosphere having a relative humidity between 50 and 85% (see claim 10 and examples). Wilson et al. is silent about the physical properties that pertains the emulsifying ability of the prepared gum Arabic. However, the silence of Wilson et al. with respect to emulsifying ability of the prepared gum Arabic does not mean that the said gum Arabic does not have an improved emulsifying ability, especially since Wilson et al. disclose that the prepared product is purified and has an acceptable viscosity (see claim 10 and examples). Furthermore, it must be noted that the reaction condition used by Wilson et al. is the same as applicant's. It should be noted that a skilled artisan would

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reasonable expect the purified gum arabic which has an acceptable viscosity to have an improved emulsifying ability. In addition, it should be noted that the Wilson et al.'s gum Arabic has been modified in that it presently has an acceptable plate count value and an acceptable viscosity (see claim 10). Furthermore, it must be noted that the reaction condition used by Wilson et al. is the same as that claimed by applicant.

The difference between applicant's claimed method and the method of Wilson et al. is that Wilson et al. uses powdered gum Arabic. However, one of ordinary skill in the art would reasonable expect to use Wilson et al.'s method to prepare gum arabic using different forms of the said gum Arabic (such as granules) in order to produce a purified gum Arabic with an acceptable viscosity as disclosed by Wilson et al.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, to have used the method of Wilson et al. to prepare gum arabic using different forms of the said gum Arabic (such as granules) in order to produce a purified gum Arabic with an acceptable viscosity as disclosed by Wilson et al.

One having ordinary skill in the art would have been motivated, to have used the method of Wilson et al. to prepare gum arabic using different forms of the said gum Arabic (such as granules) in order to produce a purified gum Arabic with an acceptable viscosity as disclosed by Wilson et al. Also, it should be noted that a skilled artisan would reasonable expect that the purified gum arabic which has an acceptable viscosity to have an improved emulsifying ability.

Response to Arguments

Applicant's arguments with respect to claims 17-31 have been considered but are not found convincing.

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The Declaration under 37 CFR 1.132 filed 08/04/08 is not sufficient to overcome the rejection of claims 17-31 based upon Ward and Wilson as set forth in the last Office action because: The Declaration fail to provide any convincing evidence or fact with respect to why the claimed gum Arabic and the method of preparation is patentable over the applied prior art.. First, the declaration, states that the test samples were allowed to stand at a temperature of 88°C (i.e., 190°F) for 12 hours. However, this is the only temperature at which said experiment or process was carried out on the samples. That is, the experiment was not carried out at other temperature such as higher and lower temperatures which may produce similar products (e.g., products with similar or the same physical characteristic such as emulsifying ability and appearance. Similarly, the experiment was carried out at only one relative humidity value of 85%. Also, the Declaration indicates that the viscosity of each of the samples was the same (11 CP) before treatment (see table 1). However, one would not expect that the samples (which are of equal amount, weight or quantity) and subjected to the same conditions but which are different (e.g., in terms of being powdered or ground or of different particle sizes) to have the same viscosity before treatment and more importantly to produce gum Arabic that has the different emulsifying ability or property. Furthermore, the Declaration uses Gum arabic having has an average particle diameter of 300 µm, to presumably represent the powdered gum arabic used by Wilson et al. However, the declaration does not use powdered gum Arabic that is of higher average particle diameter such as powdered gum Arabic with average particle diameter of about 600 or 800 µm. Such powdered may well produce gum Arabic with the same appearance and emulsifying properties as applicant's. In addition, the Declaration has failed to provide any clear, convincing, side-by-side data or evidence or facts that rebuts or refutes the rejections set forth above. Also, it is important

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to note that the claims recite physical characteristics with respect to the form of the gum Arabic used (e.g., granules) but does not recite the physical characteristics of the gum arabic produced.

The applicant argues that the modified gum arabic of claim 26, i.e., the modified gum arabic obtained by the method according to claim 17 is not octenylsuccinylated, since the gum arabic is not treated with octenylsuccinic acid. On the contrary, the modified gum arabic described by Ward is octenylsuccinylated, since the gum arabic in Ward is treated with octenylsuccinic acid. In simple terms, the obtained gum arabic in claim 26 is different from the gum arabic described in Ward. Therefore, claims 26-31 are novel over, and unanticipated by Ward. However, the rejection with respect to Ward is maintained since the examiner considers the language “in the absence of an octenylsuccinic acid treatment step” in the independent claim 17 new matter as set forth in the above rejection. Consequently, applicant claims does not exclude an octenylsuccinylated gum arabic since applicant’s claimed process “comprises a step of heating” and consequently does not exclude other steps such as treating gum arabic with octenylsuccinic acid. Furthermore, applicant’s process (as claimed in claim 26) also produces a modified gum Arabic which is the same as (or reads on) Ward’s octenylsuccinylated gum Arabic (i.e., modified gum Arabic). In addition, it should be noted that Ward’s modified gum Arabic (like applicant’s) also has an improved (enhanced) emulsifying ability.

The applicant argues that when a dry powdered natural gum is used as a sample (unmodified gum) as described in Wilson et al., a desirable and improved modified gum arabic cannot be obtained. Therefore, a skilled artisan would not reasonably expect from Wilson et al. that a modified gum arabic which has an improved emulsifying ability would be obtained as is the case with the modified gum arabic of claim 17. On the contrary, it is clear from the results of

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the experimental data that a modified gum Arabic with good appearance, emulsifying ability and viscosity was obtained, when gum arabic with an average particle diameter of 1 mm or 5 mm was used as a sample (an unmodified gum arabic). These data, it is submitted, establish the unexpected superiority of the modified gum arabic of the invention as compared to the modified gum arabic of the cited references. However, the declaration, states that the test samples were allowed to stand at a temperature of 88°C (i.e., 190°F) for 12 hours. But, this is the only temperature at which said experiment or process was carried out on the samples. That is, the experiment was not carried out at other temperature such as higher and lower temperatures which may produce similar products (e.g., products with similar or the same physical characteristic such as emulsifying ability and appearance. Similarly, the experiment was carried out at only one specific relative humidity value of 85% and only one specific time period. Also, the Declaration indicates that the viscosity of each of the samples was the same (11 CP) before treatment (see table 1). However, one would not expect that the samples (which are of equal amount, weight or quantity) and subjected to the same conditions but which are different (e.g., in terms of being powdered or ground or of different particle sizes) to have the same viscosity before treatment and more importantly to produce gum Arabic that has the different emulsifying ability or property. Furthermore, the Declaration uses Gum arabic having has an average particle diameter of 300 μm , to presumably represent the powdered gum arabic used by Wilson et al. However, the declaration does not use powdered gum Arabic that is of higher average particle diameter such as powdered gum Arabic with average particle diameter of about 600 or 800 μm . Such powdered may well produce gum Arabic with the same appearance and emulsifying properties as applicant's. In addition, the Declaration has failed to provide any clear, convincing,

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side-by-side data or evidence or facts that rebuts or refutes the rejections set forth above. Also, it is important to note that the claims recite physical characteristics with respect to the form of the gum Arabic used (e.g., granules) but does not recite the physical characteristics of the gum arabic produced.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry
June 19, 2010.

/Shaojia Anna Jiang/
Supervisory Patent Examiner
Art Unit 1623